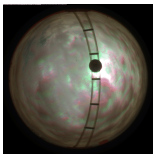
An Atmospheric Visualization Collection for the NSDL

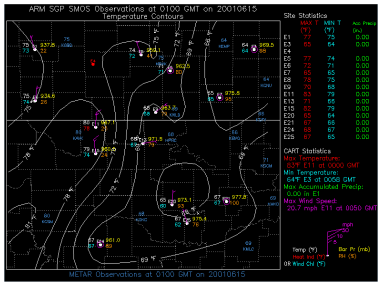
Christopher Klaus, Keith Andrew, Gerald Mace, and Erik Vernon

What is in the Atmospheric Visualization Collection (AVC)?

The AVC contains (or will contain):

1. **weather images of observational data from the Southern Great Plains (SGP) for use in research and education,**
2. **a repository of visualization codes used to form these images,**
3. **a web forum for collaborative discussions, and**
4. **lesson plans using these images at various education levels.**

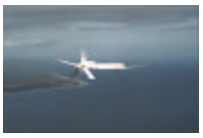


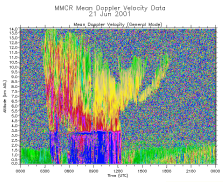


Contour Plots

-Barometric Pressure
-Temperature
-Relative Humidity
-Precipitation
-Dewpoint Temperature
-Wind Chill / Heat Index

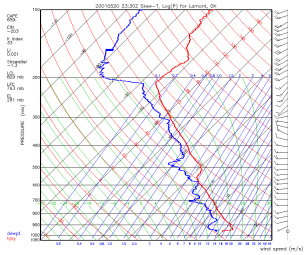
Weather images that stretch to each horizon forming animations of daily cloud cover.





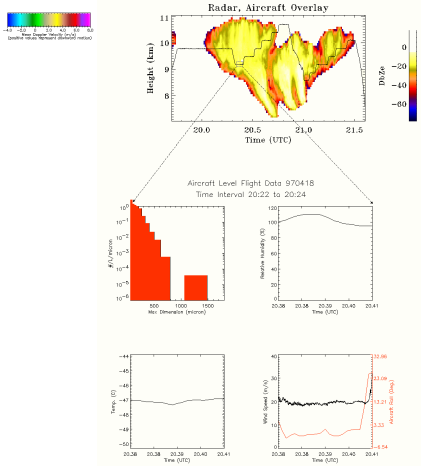
Cloud Images

Aerial and ground based data for investigating clouds.



Basic models

Calculations to develop common meteorological tools like Skewt plots.



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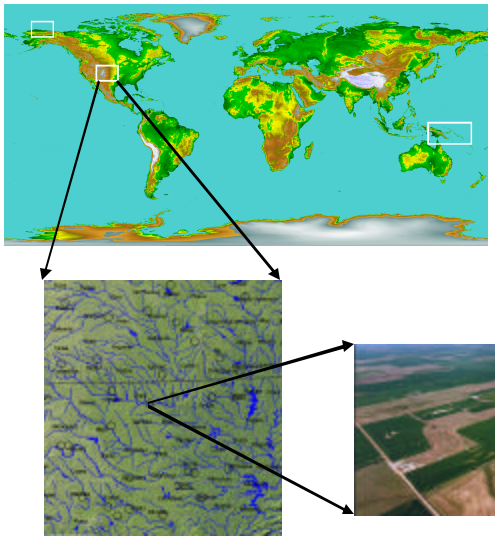
Collaborations

1. **National Science Digital Library (NSDL) projects**
   a. **Development of a NSDL white page.**
2. **University Corporation for Atmospheric Research (UCAR)**
   a. **Sharing of visualization tools.**
   b. **Working together to make this collection part of the Digital Library of Earth Science Education (DLESE).**
   c. **Involvement in the THREDDS project for real time data distribution.**
3. **Los Alamos National Lab (LANL) / ARM Outreach**
   a. **Sharing text lessons for web based development.**

Why focus on SGP data?

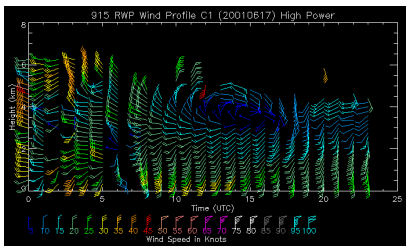
The SGP site is part of the Atmospheric Radiation Measurement (ARM) Program, which is the largest global change research program. During the course of the year the SGP site plays host to virtually every cloud type, as well as providing various climates. Over the last 10 years, ARM has collected over 13 terabytes of field measurements of which the majority is from the SGP. In addition to the qualitative and quantitative benefits of SGP data, the images can be produced in near real time.



Development of a Software Repository

A software repository is being developed to allow access to visualization codes for both the educational and research community. The quote below reflects the ARM Working Group's belief that such a repository is needed by the ARM Scientists. We believe open access for everyone to such codes will encourage future development efforts of better visualization capabilities.

"Establish a web-accessible repository for PI developed data handling software (shareware)"
The ARM IRF Working Group 2000: A Summary of Accomplishments, Strengths, Weaknesses, and Ideas for Future Activities, page 10.



Funded by the NSF National Science Digital Library (NSDL) program and the DOE Atmospheric Radiation Measurement (ARM) program.

Profile Plots

1. **Vector Wind Fields**
2. **Temperature**
3. **Pressure**
4. **Water Vapor**
5. **Reflectivity**
6. **Vertical Velocity**